

DXP HDMI Series

HDMI MATRIX SWITCHERS

- ▶ Available in 4x4, 4x8, 8x4, and 8x8 I/O sizes
- ▶ Supports computer-video to 1920x1200, including HDTV 1080p/60
- ▶ Supports HDMI specification features including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats
- ▶ HDCP compliant
- ▶ SpeedSwitch™ Technology provides exceptional switching speed for HDCP-encrypted content
- ▶ Key Minder®
- ▶ EDID Minder®
- ▶ Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200
- ▶ Automatic output reclocking
- ▶ Provides +5VDC, 250mA power on the HDMI outputs for peripheral devices



The Extron DXP HDMI Series are designed for applications where routing of high resolution, digital video signals is required. They are HDCP compliant and available in sizes of 4x4, 4x8, 8x4, and 8x8, and offer several proprietary features to optimize performance and reliability of HDMI transmission to and from the matrix switcher. The DXP HDMI Series also offers the same convenience features common to Extron matrix switchers, such as the QS-FPC front panel controller with tri-color backlit buttons, global presets, Ethernet control, and RS-232/RS-422 serial control.



Extron. Electronics
INTERFACING, SWITCHING AND CONTROL

DESCRIPTION

The Extron **DXP HDMI Series** are high performance, HDMI matrix switchers. They support resolutions up to 1920x1200 and HDTV 1080p/60, enabling simultaneous distribution of content-protected HDMI and DVI signal sources to one or more compliant displays. The matrix switchers support HDMI specification features, including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats. The DXP HDMI Series also incorporates a number of intelligent technologies that help integrators ensure reliable system operation and compatibility between digital devices, including SpeedSwitch™ Technology, Key Minder®, HDCP Visual Confirmation, EDID Minder®, and Automatic Input Cable Equalization and Output Reclocking. Available in I/O sizes from 4x4 to 8x8, the DXP HDMI Series is ideal for use in applications that require reliable, high performance routing of HDMI and DVI digital signals between multiple devices.

The DXP HDMI Series features two key Extron technologies that enhance and simplify integration: EDID Minder and Key Minder. EDID Minder automatically manages EDID communications for each input/output tie. By maintaining continuous EDID communication with all sources, EDID Minder ensures that all HDMI sources power up properly and maintain their video outputs whether or not they are actively connected to the digital display devices through the matrix switcher's outputs. For HDMI signals with protected content, Key Minder continuously authenticates HDCP-compliant input and output devices to ensure quick and reliable switching in professional AV environments while enabling simultaneous distribution of a single source signal to one or more displays. When an HDCP-compliant source is routed to a non-compliant display, the switcher outputs a full-screen green signal, providing immediate visual confirmation that the protected content cannot be viewed on the selected display.

DXP HDMI matrix switchers also feature automatic cable equalization for all inputs and output reclocking for each output. This reduces the need for additional signal conditioning equipment by compensating for weak source signals or signal loss when using long input cable assemblies. Automatic output reclocking restores signal integrity for improved performance. Signals are reshaped and the timing is restored to allow for transmission over long HDMI cables. Additionally, all models offer +5VDC, 250mA on the HDMI outputs for powering peripheral devices.

The DXP HDMI Series matrix switchers are ideal for use in commercial, medical, government, residential, and other environments where a fully digital pathway is essential to maintain image quality of high resolution, digital video signals from multiple sources to multiple displays.

FEATURES

- ▶ Supports computer-video to 1920x1200, including HDTV 1080p/60
- ▶ Supports HDMI specification features including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats
- ▶ HDCP compliant
- ▶ SpeedSwitch Technology provides exceptional switching speed for HDCP-encrypted content

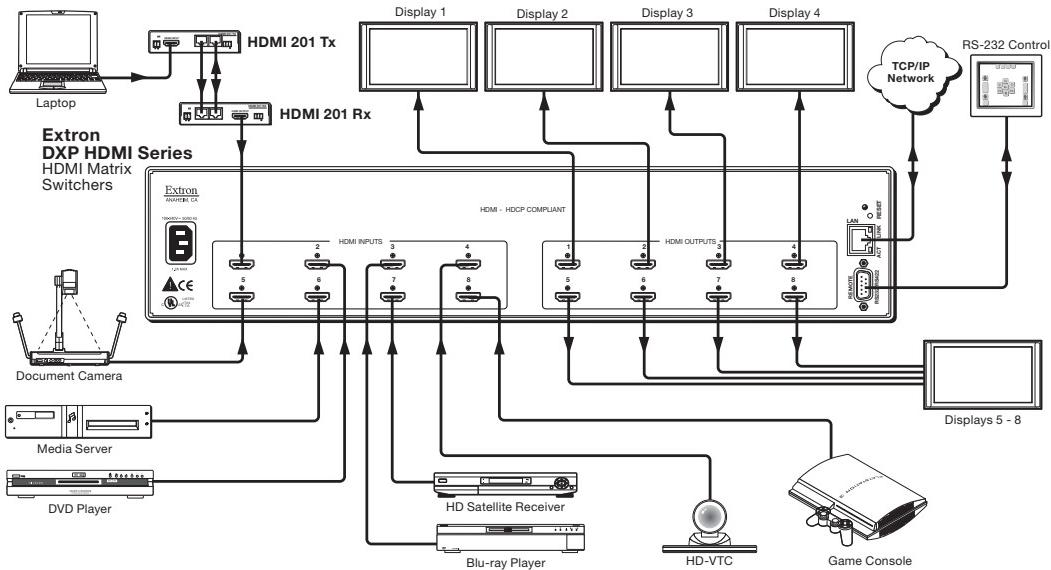
FEATURES (Cont.)

- ▶ **Key Minder continuously verifies HDCP compliance for quick, reliable switching** – Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.
- ▶ **HDCP Visual Confirmation provides a green signal when encrypted content is sent to a non-compliant display** – A full-screen green signal is sent when HDCP-encrypted content is transmitted to a non-HDCP compliant display, providing immediate visual confirmation that protected content cannot be viewed on the display.
- ▶ **EDID Minder automatically manages EDID communication between connected devices** – EDID Minder ensures that all sources power up properly and reliably output content for display.
- ▶ **Automatic color bit depth management** – The switcher automatically adjusts color bit depth based on display EDID, preventing color compatibility conflicts between source and display.
- ▶ **Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200/8-bit color when used with Extron HDMI Pro cables**
- ▶ **Automatic output reclocking** – Reshapes and restores timing of HDMI signals at each output, enabling transmission over long HDMI cables.
- ▶ **Provides +5VDC, 250mA power on the HDMI outputs for peripheral devices**
- ▶ **Audio breakaway** – Provides the capability to separate an embedded audio signal, allowing the audio and video signals from one source to be switched to different destinations.
- ▶ **Global presets** – Up to 32 frequently used I/O configurations may be saved and recalled from the front panel, Ethernet, or serial control.
- ▶ **Rooming** – The matrix switchers can be configured to group selected outputs into specific "rooms," each with its own set of unique presets. A total of 10 rooms, with 10 presets per room, are available.
- ▶ **I/O Grouping** – Allows the matrix switcher to be virtually divided into smaller sub-switchers, making installation and control easier.
- ▶ **Tri-color, backlit buttons** – Can be custom labeled for easy identification. The backlit buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.
- ▶ **Ethernet monitoring and control** – DXP HDMI matrix switchers can be proactively monitored and managed over a LAN, WAN, or the Internet, using standard TCP/IP protocols.
- ▶ **RS-232 and RS-422 control port** – Using serial commands, DXP HDMI matrix switchers can be controlled and configured via the included Windows®-based control software, or integrated into a control system.
- ▶ **Control software** – Provides a graphical, drag-and-drop interface for I/O configuration and other customization functions via RS-232 and RS-422 remote control. This software also offers an emulation mode for configuration of an offsite matrix switcher; the I/O configuration may be saved for future downloading to the matrix switcher.
- ▶ **Front panel security lockout** – Prevents unauthorized use in non-secure environments.
- ▶ **Rack-mountable 2U, full rack width metal enclosure**
- ▶ **Includes LockIt® HDMI cable lacing brackets**
- ▶ **Internal universal power supply**

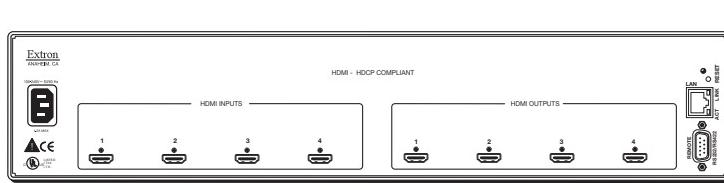
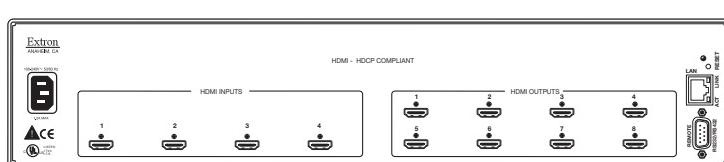
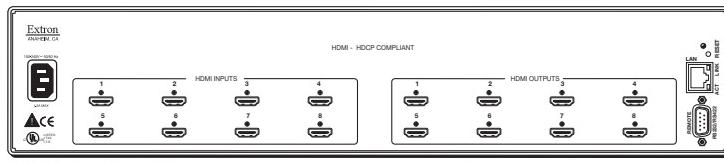
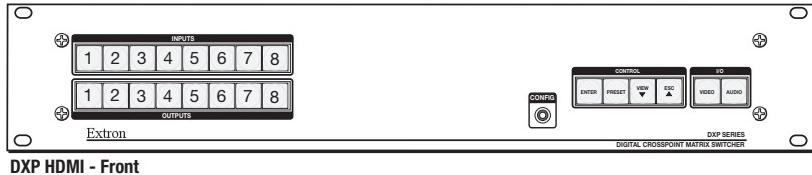
SPECIFICATIONS

NOTE: *Appropriate HDMI to DVI-D cables or adapters are required for DVI signal input/output.		
VIDEO		
Routing		
DXP 44 HDMI	4 x 4 matrix	
DXP 48 HDMI	4 x 8 matrix	
DXP 84 HDMI	8 x 4 matrix	
DXP 88 HDMI	8 x 8 matrix	
Signal type		
Digital video	TMDS digital RGB and single-link DVI digital video signals are supported RGB digital video (DVI and HDMI standards) or Y, Cr, Cb digital component video (HDMI), actively buffered (supports all single-link DVI and HDMI [if using an optional adapter]) standards from 640x480 @ 60 Hz to 1600x1200 @ 60 Hz computer video and HDTV 480p, 720p, 1080i, 1080p)	
NOTE: The DXP HDMI Series switchers support HDMI specification features including data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats.		
Digital audio	Supports HDMI audio transmitted through the RGB and Y, Cr, Cb lines, actively buffered.	
EDID and DDC	Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards. EDID and DDC signals are actively buffered.	
HDCP	Compliant with High-bandwidth Digital Content Protection (HDCP) using DVI and HDMI standards	
HPD	Supports hot plug detection (HPD) of display as a pass-through signal.	
Gain	Unity	
Resolution range	Up to 1080p (HDTV) or 1920x1200 (the highest resolution of the single-link DVI standard) @ 60 Hz	
Maximum data rate	6.75 Gbps (2.25 Gbps per color)	
Maximum pixel clock	225 MHz	
Standards	DVI 1.0, HDMI	
Switching speed	200 ns, max.	
VIDEO INPUT		
Number/signal type	4 or 8 (depending on model) digital RGB (TMDS) HDMI (or single-link DVI-D*)	
Connectors	4 or 8 female HDMI type A (digital only)	
Nominal level		
Digital video	1.2 Vp-p	
DDC (Display Data Channel)	5.0 Vp-p (TTL)	
Minimum/maximum level	0.5 V to 1.0 Vp-p with no offset	
Impedance	100 ohms	
Return loss	<-15 dB @ 1 MHz to 1.5 GHz	
TDR rise time (10%-90%)	75 ps	
Equalization	Automatic	
Input cable length	>100' (30 m) at 1920x1200 @ 48, 50, or 60 Hz; or 1080p; 8 bit color	
NOTE: The transmission distance varies depending on the signal resolution and on the type of cable, graphic card, and display used in the system.		
VIDEO OUTPUT		
Number/signal type	4 or 8 (depending on model) digital RGB	
Connectors	4 or 8 female HDMI type A	
Nominal level	1.2 Vp-p	
Minimum/maximum level(s)	0.5 V to 1.0 Vp-p with no offset (follows input)	
Impedance	100 ohms	
Return loss	<-15 dB @ 1 MHz to 1.5 GHz	
DC offset	±500 mV maximum with input at 0 offset	
Rise and fall time (20-80%)	0.6 ns	
Re-clocking	Automatic	
Peripheral device power	250 mA per output	
CONTROL/REMOTE – SWITCHER		
Serial control port	(1) RS-232, 9-pin female D connector (1) RS-232, front panel 2.5 mm mini stereo jack	
Baud rate and protocol	9600 to 115200 baud, 9600 baud (default), 8 data bits, 1 stop bit, no parity	
Serial control pin configurations		
9-pin D connector	2 = Tx, 3 = Rx, 5 = GND	
Mini stereo jack	Tip = Tx, ring = Rx, sleeve = GND	
Ethernet control port	(1) RJ-45 female connector	
Ethernet data rate	10/100Base-T, half/full duplex with autodetect	
Ethernet protocol	ARP, ICMP (ping), IP, TCP, DHCP, HTTP, Telnet	
Default settings	Link speed and duplex level = autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Gateway = 0.0.0.0 DHCP = off	
Program control	Extron control/configuration program for Windows® Extron Simple Instruction Set (SIS™) Microsoft® Internet Explorer® ver. 6 or higher, Telnet	
GENERAL		
Power supply	Internal Input: 100-240 VAC, 50-60 Hz	
Power consumption	48 watts, fully loaded 8 x 8 unit	
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing	
Cooling	Fan, air flows right to left (as viewed from front)	
Thermal dissipation, full load	164 BTU	
Mounting		
Rack mount	Yes, 2U high	
Enclosure type	Metal	
Enclosure dimensions	3.5" H x 17.5" W x 12.0" D (2U high, full rack wide) (8.9 cm H x 44.4 cm W x 30.5 cm D) (Depth excludes connectors. Width excludes integrated rack ears.)	
Product weight	10.0 lbs (4.5 kg)	
Shipping weight	15 lbs (7 kg)	
Vibration	ISTA 1A in carton (International Safe Transit Association)	
Regulatory compliance		
Safety	CE, c-UL, UL	
Compliances	CE, C-tick, FCC Class A, ICES, VCCI	
MTBF	30,000 hours	
Warranty	3 years parts and labor	
NOTE: All nominal levels are at ±10%.		
Model	Version Description	Part number
DXP 44 HDMI	4x4 HDMI Matrix Switcher	60-880-01
DXP 48 HDMI	4x8 HDMI Matrix Switcher	60-1010-01
DXP 84 HDMI	8x4 HDMI Matrix Switcher	60-881-01
DXP 88 HDMI	8x8 HDMI Matrix Switcher	60-882-01

APPLICATION DIAGRAM



PANEL DRAWINGS



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